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NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No.: CECTC-BBMP-GNR-W.No.14-2016-17 Date: 04.07.2016

TEST REPORT

CLIENT	:	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
AGENCY	:	**Sri. G.N. Ramesh,** Contractor, Bangalore.
NAME OF THE WORK	:	Improvements to roads and drains at 11th Cross, Bhuvaneshwarinagara in Bagalagunte Ward No. 14, BBMP, Bangalore.
REFERENCE	:	EE/DD/WO/85/2015-16 Dated: 24.03.2016
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-2013
1	a) Initial Setting Time	IS-4031 (Part -5)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	375 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	29.50 %	-

Note:

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ಬಾಗಲಗುಂಟೆ, ಬಿಬಿಎಂಪಿ
ಬೆಂಗಳೂರು

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Job No.: CECTC-BBMP-GNR-W.No.14-2016-17 **Date:** 19.07.2016

Aggregate Impact Value

MORTH TABLE-400-13
IS: 2386 Part IV

Client	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Contractor	**Sri. G.N. Ramesh,** Contractor, Bangalore.
Name of the Work	Improvements to roads and drains at 11th Cross, Bhuvaneshwarinagara in Bagalagunte Ward No. 14, BBMP, Bangalore.
Reference	EE/DD/WO/85/2015-16 Dated: 24.03.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	19.07.2016

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	380	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	84	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296	296	296	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	21.69	22.11	22.51	**22.10**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CECTC-BBMP-GNR-W.No.14-2016-17 Date : 20.07.2016

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Contractor : **Sri. G.N. Ramesh,** Contractor, Bangalore.
Name of Work : Improvements to roads and drains at 11th Cross, Bhuvaneshwarinagara in Bagalagunte Ward No. 14, BBMP, Bangalore.
Reference : EE/DD/WO/85/2015-16 Dated: 24.03.2016
Date of Testing : 20.07.2016
Material : Wet Mix Macadam
Sample Location : WMM Mix Plant

As per MORTH Table 400-13

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.35	Nill
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CECTC-BBMP-GNR-W.No.14-2016-17 Date: 26.07.2014

TEST REPORT

Client	:	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	:	**Sri. G.N. Ramesh,** Contractor, Bangalore.
Name of the work	:	Improvements to roads and drains at 11th Cross, Bhuvaneshwarinagara in Bagalagunte Ward No. 14, BBMP, Bangalore.
Reference	:	EE/DD/WO/85/2015-16 Dated: 24.03.2016
Source of location	:	Hot mix Plant, Bangalore
Date of testing	:	26.07.2014

The results of the tests conducted on the bitumen sample using for Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	68	60 to 70
2	Softening point, ^{0}C	47	Min. 45
3	Ductility at 27^{0}C, cm	100 >	Min. 50
4	Flash Point, ^{0}C	298	Min. 220

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Job No.: CECTC-BBMP-GNR-W.No.14-2016-17 : 26.07.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	: **Sri. G.N. Ramesh,** Contractor, Bangalore.
Name of Work	: Improvements to roads and drains at 11th Cross, Bhuvaneshwarinagara in Bagalagunte Ward No. 14, BBMP, Bangalore.
Reference	: EE/DD/WO/85/2015-16 Dated: 24.03.2016
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Bituminous Concrete
Date of Testing	: 26.07.2016

Result : Flakiness Index = **11.67%**

Elongation Index = **13.82%**

Result : Combined Flakiness & Elongation index **25.49%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Concrete is 30%

Note:

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Job No.: CECTC-BBMP-GNR-W.No.14-2016-17 Date: 28.07.2016

TEST REPORT ON STABILITY OF MIX

Client	:	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	:	**Sri. G.N. Ramesh,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drains at 11th Cross, Bhuvaneshwarinagara in Bagalagunte Ward No. 14, BBMP, Bangalore.
Reference	:	EE/DD/WO/85/2015-16 Dated: 24.03.2016
Source of location	:	Hot mix Plant, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	28.07.2016

The results of the tests conducted on the bituminous concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.55	10.15	9 Kn (min)
2	Marshal flow, mm	2.80	3.45	2 – 4
3	Percent air voids in Mineral Aggregate	13.25	14.80	13 – 15
4	Voids in Compacted Mix	4.30	5.15	3 – 6
5	Percent Voids filled with Bitumen	69.55	70.10	65 - 75
6	Density, g/cc	2.27	2.26	--

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